Energy Efficiency

Energy efficiency is a simple concept that can reduce your impact on the climate, cut dependence on foreign oil and save you money. Here it is in a nutshell: when you need to use energy to get something done, use as little energy as possible. That's it. This simple, infectious idea can affect virtually everything you do. And if everyone works together to use energy more efficiently, the whole planet will breathe a sigh of relief.

Efficiency you can feel

Perhaps the best place to study energy efficiency is on a bicycle. Start off riding a big, heavy, old clunker of a bike with a rusty chain and tires that are almost flat. Now, pedal it for awhile. Not surprisingly, you get tired of squeaking slowly down the road by the time you reach the gas station at the end of the street. So you stop, panting, and pump up the tires and put some oil on the rusty chain. Thankfully, the ride back home is much easier. That's energy efficiency: using less energy to get the same job done.

A bicycle makes a good example because you can *feel* the energy you are using. But it's tougher to grasp how much energy a refrigerator uses as it stands in the corner, or how much energy a light bulb quietly consumes in its socket. In fact, it can be impossible to tell without a meter or a label.

Efficiency you can see

Light bulbs are a great example. They do a very specific job for us: providing energy in the form of light. We can see and measure exactly how bright a specific light bulb is, but the amount of energy being used is not so obvious. An incandescent bulb (the "standard" glass bulb type) uses more energy to achieve the same brightness as a compact fluorescent, or CFL (the swirly pig-tail type). So many, many people are switching to more efficient CFL bulbs, which provide the same amount of light at about one fourth the energy cost.

There is an even newer technology on the light bulb scene: LEDs (many little lights). They work well in specific lighting situations - like spotlighting work areas - and they use very little energy to do this job. LED bulbs are more expensive, but the energy costs are very low and the price of the bulbs themselves is dropping quickly. This is a price pattern followed by all kinds of appliances, cars and any other technology that improves energy efficiency.

Mercury in Compact Fluorescent Bulbs

Each modern CFL bulb contains about 5 mg (5/1000 of a gram) of mercury, that's about the size of the period at the end of this sentence.

The mercury remains sealed inside the bulb unless broken, which is not an emergency although it should be cleaned up carefully. All CFL bulbs should be recycled to keep mercury out of the environment.

Coal-fired electricity generation emits uncontained mercury. Using equivalent incandescent bulbs instead of one CFL bulb can put 23 mg of mercury directly into the environment due to the additional electricity required.

Source: The Sierra Club

- New technology costs more, but as people purchase these efficient products in bulk the price drops.
- The more efficient the technology is, the less you pay for energy while using that technology.

At a certain point, after saving energy for awhile, the efficient product will "pay for itself" in energy cost savings. This is called the **payback point**, and it is an important figure for cost-conscious consumers. But keep in mind that these products also prevent greenhouse gases from being released into the atmosphere and reduce dependence on foreign energy. They are worth much more than just the money you save by using them.